

REMARKS

Claims 1, 2, 4, and 6-24 are pending in the present Application, with claims 4 and 6-9 being withdrawn. Claims 1-2, 10-13, 16-17, and 23-24 have been amended, claims 11 and 14-15 have been canceled, and no claims have been added, leaving claims 1-2 and 10, 12-13, and 16-24 for consideration upon entry of the present amendments. No new matter has been introduced by these amendments. Reconsideration and allowance of the claims are respectfully requested in view of the above amendments and the following remarks.

35 U.S.C. §112 Rejections

Claims 16 and 17 have been rejected under 35 U.S.C. §112, first paragraph, as allegedly failing to comply with the written description requirement. Specifically, the Examiner believes that the limitation regarding “the lower limit of the hydrophobe types” in claims 16 and 17 does not have support in the specification since these claims depend from claim 13, which requires a hydrophobically modified aminoplast. Claims 16 and 17 have been amended such that they now depend from claim 1, which requires a hydrophobically modified polyethoxylated urethane thickener. Support for these amendments can be found in paragraph 24 of the originally filed specification. Applicants therefore respectfully request withdrawal of the 35 U.S.C. §112 rejections of claims 16 and 17 since these rejections have been rendered moot.

35 U.S.C. §102 Rejections

Claims 1 and 2 have been rejected under 35 U.S.C. § 102(a), as allegedly anticipated by U.S. Patent No. 5,137,571 to Eisenhart et al. (hereinafter “Eisenhart”) with U.S. Patent No. 5,354,808 to Onwumere et al. to support inherency. Applicants respectfully traverse these rejections.

To anticipate a claim, a reference must disclose each and every element of the claim. *Lewmar Marine v. Varient Inc.*, 3 U.S.P.Q.2d 1766 (Fed. Cir. 1987). Claim 1 has been amended to remove 4,4'-methylenebis(isocyanatocyclohexane) from the list of diisocyanates from which a urethane linkage of a hydrophobically modified polyethoxylated urethane

thickener can be formed.

While Eisenhart discloses complexation of cyclodextrin-containing compounds with thickeners such as hydrophobically modified polyethoxylated urethanes (see e.g., claim 1), Eisenhart fails to teach that the urethane thickeners comprise at least one urethane linkage formed from any of the diisocyanates listed in independent claim 1. The only hydrophobically modified urethane thickener disclosed by Eisenhart is QR-708 thickener sold by Rohm & Haas Company (see Example 1, column 7, lines 7-16), which is based on H₁₂MDI (methylene bis (4-cyclohexyl isocyanate)). Eisenhart thus does not disclose hydrophobically modified urethane thickeners based on any of the diisocyanates listed in claim 1.

In view of the foregoing, independent claim 1 and claim 2, which depends therefrom, are not anticipated by the cited art. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. §102 rejections of claims 1 and 2.

35 U.S.C. §103 Rejections

Claims 1 and 2 have been rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Eisenhart in view of U.S. Patent No. 4,079,028 to Emmons et al. (hereinafter “Emmons”). In addition, claims 10-24 have been rejected under 35 U.S.C. § 103(a), as allegedly unpatentable over Eisenhart in view of U.S. Patent No. 5,914,373 to Glancy et al. (hereinafter “Glancy”). Applicants respectfully traverse these rejections.

For an obviousness rejection to be proper, the Examiner must meet the burden of establishing a *prima facie* case of obviousness. *In re Fine*, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988). It has long been recognized that establishing a *prima facie* case of obviousness requires that all elements of the invention be disclosed in the prior art. *In re Wilson*, 165 U.S.P.Q. 494, 496 (C.C.P.A. 1970). Moreover, in *KSR International Co. v. Teleflex Inc.*, the Supreme Court recently found that it remains legally insufficient to conclude that a claim is obvious “merely by demonstrating that each element was, independently, known in the prior art.” *KSR International Co. v. Teleflex Inc.*, 127 S. Ct. 1731 (2007). The Court stated that it is also important for the Examiner to “identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the elements in the way the claimed new

invention does.” *Id.* Additionally, the Court indicated that “this analysis should be made explicit.” *Id.*

Turning to the rejections of claims 1-2, as described above, Eisenhart fails to teach or suggest a composition comprising a hydrophobically modified polyethoxylated urethane thickener formed from any of the diisocyanate compounds listed in claim 1. The Examiner relies on Emmons (the paragraph spanning columns 8-9) as teaching the preparation of such thickeners from certain ones of the diisocyanate compounds listed in claim 1. Applicants respectfully disagree with the Examiner’s contention that Eisenhart discloses the use of the thickeners taught in Emmons. Throughout the Summary and Detailed Description of the Invention, Eisenhart never suggests using the thickeners disclosed in Emmons. Eisenhart merely mentions Emmons in the Description of the Prior Art as one of several references that discloses polyurethane thickeners formulated with organic solvents (column 1, lines 59-62). Eisenhart indicates that these references are problematic because they fail to “disclose or suggest a suitable method for providing the thickener in an aqueous solution at a handleable viscosity without the use of organic cosolvents” (column 2, lines 15-18). Eisenhart then teaches away from using such organic solvents with thickeners by stating that “[i]t is therefore an object of the present invention to provide a method for improving associative thickeners by eliminating the need for organic cosolvents” (column 2, lines 19-22). A person of ordinary skill in the art would not be lead to combine the teachings of Eisenhart with those of Emmons since Eisenhart indicates that Emmons is a problematic prior art reference that undesirably uses organic cosolvents.

Even if the thickeners disclosed in Emmons could be combined with the teachings of Eisenhart, neither of these references suggests which particular thickeners listed in claim 1 are to be complexed with which particular cyclodextrin compounds of Eisenhart. Claim 1 specifically addresses which hydrophobically modified polyethoxylated urethane thickener should be complexed with which cyclodextrin-containing compound by indicating that the thickener comprises at least one terminal phobe of a size capable of complexing with the hydrophobic cavity of the cyclodextrin-containing compound. As indicated at page 5, the middle paragraph of the present application, Applicants have discovered that the better the fit

of the terminal hydrophobic portions of the associative thickener in the cyclodextrin compound hydrophobic cavity, the higher the viscosity suppression efficiency of the cyclodextrin-containing compound. Neither Eisenhart nor Emmons suggests this discovery made by the Applicants. As such, a person of ordinary skill in the art would not be lead to select the thickener to be combined with a particular cyclodextrin compound based on the size of the terminal phobe of the thickener.

In addition, dependent claim 2 has been amended to indicate that the cyclodextrin-containing compound is methyl-alpha cyclodextrin. As indicated at page 8, the second full paragraph, Applicants have discovered that in some cases, methyl-alpha-cyclodextrin, can provide better viscosity suppression than even methyl-beta-cyclodextrin. Neither Eisenhart nor Emmons suggests using methyl-alpha-cyclodextrin (a modified cyclodextrin) as the cyclodextrin compound. Instead, Eisenhart discloses that it is preferable to utilize hydroxyethyl- or hydroxypropylcyclodextrins having a higher degree of water solubility than the unmodified cyclodextrins, i.e., alpha, beta, and gamma cyclodextrins (column 3, lines 58-63).

Turning to the rejections of claims 10-24, claim 10 has been amended to cover a composition comprising a hydrophobically modified aminoplast-ether copolymer thickener and a cyclodextrin compound selected from the group consisting of alpha (α), beta (β), and gamma (γ) cyclodextrin, wherein a solids content of the copolymer is 15-25 weight %. Also, independent claim 13 has been amended to cover a composition comprising a hydrophobically modified aminoplast polyether copolymer thickener and a viscosity suppressing agent selected from the group consisting of alpha (α), beta (β), and gamma (γ) cyclodextrin, wherein the lower limit of the solids content of the copolymer is 15 weight %. Claims 11 and 14-15 have been canceled, rendering the rejections of these claims moot.

Whether taken singly or in combination, Eisenhart and Glancy fail to teach or suggest that the solids content of a thickener in a composition is at least 15 weight % or in the range of 15-25 weight % when a cyclodextrin compound or viscosity suppressing agent in the composition is alpha, beta, or gamma cyclodextrin, which are unmodified cyclodextrins. Each of these references is discussed below.

As acknowledged at the bottom of page 4 of the Office Action, Eisenhart does not teach the use of a hydrophobically modified aminoplast polyether copolymer, much less the claimed solids content of this copolymer in a composition comprising alpha, beta, or gamma cyclodextrin. Eisenhart does, however, teach that in aqueous solutions containing low concentrations of associative thickener solids, for example, about 3 weight %, unmodified cyclodextrins, including beta cyclodextrins, are effective viscosity suppressing additives. However, Eisenhart discloses that in aqueous solutions containing high concentrations of associative thickener solids, for example, greater than 10 weight %, the modified cyclodextrins are effective instead. See column 4, lines 53-63. Thus, Eisenhart teaches the opposite of claims 10 and 13 since it indicates that modified cyclodextrins are employed when the solids content of the thickener is greater than 10 weight % and that unmodified cyclodextrins are employed when the solids content of the thickener is relatively low.

While Glancy discloses aminoplast-ether copolymers that are desirable associate thickeners for use in water based coating compositions (column 1, lines 6-10), Glancy in no way suggests that the thickener can be used in combination with alpha, beta, or gamma cyclodextrin or that the solids content of the copolymer in a composition comprising cyclodextrin is at least 15 weigh % or in the range of 15-25 weight %.

Based on the foregoing, the Examiner has failed to establish a *prima facie* case of obviousness with respect to independent claims 1, 10, and 13 and the claims depending therefrom. Furthermore, dependent claim 2 is separately patentable. Accordingly, Applicants respectfully request withdrawal of the 35 U.S.C. § 103(a) rejections of claims 1-2, 10, 12-13, and 16-24.

It is believed that the foregoing amendments and remarks fully comply with the Office Action and that the claims herein should now be allowable to Applicants. Accordingly, reconsideration and withdrawal of the objection(s) and rejection(s) and allowance of the case are respectfully requested.

If there are any additional charges with respect to this Amendment or otherwise, please charge them to Deposit Account No. 18-1850.

Respectfully submitted,

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